

APPLICATION FOR UNITED STATES LETTERS PATENT

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INVENTION: GAME MACHINE, SERVER  
SYSTEM, INFORMATION  
SERVICE METHOD AND  
RECORDING MEDIUM

S P E C I F I C A T I O N

The present disclosure relates to subject matter contained in Japanese Patent Application No. 2000-351909, filed on November 17, 2000, the disclosure of which is expressly incorporated herein by reference in its  
5 entirety.

## BACKGROUND OF THE INVENTION

### FIELD OF THE INVENTION

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The present invention relates to a (video) game machine that is connectable to an information service system such as a server via a communications network, and preferably applicable to receiving various information  
15 services from the server, and also relates to an information service system, an information service method and a recording medium associated with the video game machine.

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### DESCRIPTION OF THE RELATED ART

As a communications network such as the Internet becomes popular, online games are started which have a video game machine connected to a server connected to the  
25 Internet to carry out games using game related information provided by the server.

The online games include games a user plays

individually, and games a group of users participate in like competing games.

To play an online game in which a group of users participate, users decide a date for the game by telephone  
5 or E-mail.

Accordingly, the users playing the game together are usually limited to familiar friends. Although it will also be possible to look for parties in a chat room (electronic forum) on the Internet, they are not always  
10 successfully found.

#### SUMMARY OF THE INVENTION

Therefore, an object of the present invention is to  
15 provide a game machine, a server system, an information service method and a recording medium allowing a user to look for peer users easily to share an information service with them such as in an online game.

According to the present invention, there is provided  
20 a server system which is connected to a group of video game machines via a communications network, and includes a profile server for storing personal information on each user, and an information providing server for providing at least one information service, the server system  
25 includes a registration system that selects and records at least one second user in the profile server to allow a first user to check personal information about the second

user a system that causes, when the video game machine sends a request for providing an information service, the information providing server to notify the profile server of the request sent from the video game machine. The server system also includes an update system that updates personal information on the user of the game machine that issues the request in the profile server; and a transmitter that transmits personal information on the second user to the game machine of the first user.

According to the present invention, there may be provided a game machine connected to a server system that includes a profile server for storing personal information on each user, and an information providing server for providing at least one information service, wherein personal information that includes a utilization state of the information service by at least one second user selected by a first user in advance is recorded in the profile server, and the personal information recorded is updated at predetermined intervals and transmitted to the game machine regularly. The game machine includes a display controller the displays the personal information transmitted.

According to the present invention, the game machine, further may also include a setting system that sets a correspondence list used for displaying the utilization state of the information service by the second user in a predetermined format. Moreover, the display controller

may display the utilization state of the information service by the second user in the predetermined format using the correspondence list. According to the present invention, the predetermined format may include icons.

5       According to the present invention, there may be provided a recording medium that records a program executed by a game machine connected to a server system including a profile server for storing personal information of each user, and an information providing server for providing  
10   at least one information service. Personal information includes a utilization state of the information service by at least one second user selected by a first user in advance is recorded in the profile server. The recorded personal information is updated at predetermined intervals  
15   and transmitted to the game machine regularly. The program includes displaying the personal information transmitted.

      According to the present invention, since the video game machine allows its user to obtain personal information  
20   on other users, the user can look for users connected to the information service system easily.

      The above and other objects, features and advantages of the present invention will become more apparent from the following description of embodiments thereof taken in  
25   conjunction with the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram showing a configuration of an embodiment of a system in accordance with an aspect of the present invention;

5 Fig. 2 is a diagram illustrating the content of the information processing of the embodiment in accordance with an aspect of the present invention;

Fig. 3 is a flowchart illustrating the content of the information processing on a server side according to an aspect of the present invention;

Fig. 4 is a flowchart illustrating the content of the information processing on the profile server side according to an aspect of the present invention;

Fig. 5 is a flowchart illustrating the content of the information processing on a client side according to an aspect of the present invention; and

Fig. 6 is a diagram illustrating an example of a display screen on the client side according to an aspect of the present invention.

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#### DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

An embodiment of the present invention will now be described in detail with reference to the accompanying drawings.

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Fig. 1 shows a configuration of an entire network system of the present embodiment. In Fig. 1, the network

system comprises a communications network 101, a server group 102 of a provider, and clients 103a, 103b, 104a and 104b, for example, connectable to the server group 102 via the communications network 101 to be used by a group of  
5 users. The server group 102, and the clients 103a, 103b, 104a and 104b each consist of a computer system.

The server group 102 has its internal servers cooperate to provide various information services. An information service system consisting of a set of the  
10 servers in the server group 102 is installed in various countries all over the world, configuring the server group 102. The information service system includes authentication servers 111, contents servers 112, message servers 113, mail servers 114, game A servers 116a, game  
15 B servers 116b and profile servers 115. The authentication servers 111 manage accounts of member users (user IDs (identifiers)) and passwords. The authentication servers 111 can also manage the connection states (online/offline) of the users and the addresses of  
20 the client machines of the users in the online state. The contents servers 112 provide various pieces of information about sports, music, comics, shopping and the like.

The message servers 113 provide an environment for real-time message exchanges between users. Specifically,  
25 they provide an environment for the users to activate a messenger application and chatting application on the client machine. The message servers 113 also perform

routing (establish destinations and routes) for delivering messages exchanged by the messenger application and chatting messages of the chatting application.

5 The mail servers 114 provide an E-mail exchange service between users.

10 The game A servers 116a and game B servers 116b provide online games. The user activates an online game in the game server from a viewer to play it. For example, if the online game is a role-playing game (game in which the user participates as a character of the game), he or she can play the role-playing game with other member users.

15 The profile servers 115 store a status file in a memory to manage for each user's account the profile of the user associated with the account, and status information, short messages and the like, which will be described later. Using the viewer the user can record to the profile server 115 his or her own profile, a short message and information indicating whether the user is a child.

20 The clients 103a and 103b may be a home video game machine such as a PlayStation II (trade mark) of Sony Corp. The clients 104a and 104b may be a general purpose personal computer (called PC from now on). The clients can load programs that relate to the present invention and will be described later from a recording medium such as a CDROM, 25 and execute them. The clients 103a, 103b, 104a or 104b will be simply referred to as a client below.

The communications network 101 interconnects the



server group 102 and the clients 103a, 103b, 104a and 104b and the like. The present embodiment supposes the Internet as the communications network 101 that can use such common protocols as TCP/IP (transmission control  
5 protocol/Internet protocol), HTTP (hypertext transfer protocol), SMTP(simple mail transfer protocol) and FTP(file transfer protocol) for the data transfer.

In the present embodiment, the description is made when the client is the home video game machine 103a.

10 The client 103a comprises at least a main unit of the game machine, a television set, a CDROM driver and a controller. The main unit of the game machine activates the viewer, and accesses the server group 102. The television set outputs video and sound data supplied from  
15 the main unit of the game machine. The controller supplies the main unit of the game machine with a command from the user. The viewer is installed from the CDROM to the main unit of the game machine. In the present embodiment, the viewer incorporates the program of Fig. 5 so that the CPU  
20 in the main unit of the game machine executes the program, thereby carrying out the information processing of the present invention.

More specifically, the user can find the status (utilization status) of other member users of the  
25 information service system on the display screen of Fig. 6 using the game machine 103a. Each status indicates whether the member user is connected to the information

service system, and when connected, the type of the information service used, and whether he or she is a child or not.

It is also possible to limit the users whose status are to be reported. In this case, each user records the names of other users whose status he or she wishes to be noticed of from his or her client to the profile server 115. The file listing the names of the registered users is prepared for each user. In the present embodiment, the file is called a friend list.

In contrast, the names of other users whose status the user does not wish to be noticed of can also be recorded from the client to the profile server 115 in the present embodiment. The file of the user names registered in this way is called a black list in the present embodiment. The black list is also prepared for each user.

Taking account of the foregoing explanation, a reporting method of the status of other users will be described with reference to Fig. 2.

Assume that a user B whose name is "akiko" accesses the information service using the client 104b. After authenticating the user ID and the password, the authentication server 111 permits the access to the game server 116a. When the user B accesses the game server 116a through the client 104b, and starts a role-playing game, the game server 116a supplies the profile server 115 with the name of the user who starts the game ("akiko" in this

case), the game name and the status, that is, the status information that indicates the start of the game in this case. The user name and the status information are stored in the profile data memory area along with the user name

5 "akiko".

When the user name "akiko" is recorded in the friend list of the client of a user A (user name "naoko"), the profile server 115 regularly transmits the client's status recorded in the friend list to the client A. Accordingly,

10 as illustrated in Fig. 2, a message "enjoying adventure" indicating that "akiko" starts the game is displayed on the right of the user name [akiko] on the screen of the client A. The message "enjoying adventure" is a message assigned to a particular game, and when the user B starts

15 another game, a message indicating its content is displayed instead. The message is prepared by the profile server 115, and is sent from the profile server 115 to the client 104a. The message on the upper left of the user name is a message the user of the client gives, which is called

20 a short message in the present specification.

Thus, when the user B with the user name ("akiko"), whom the user A selects and records in the friend list, accesses the information service system through the client, the name of the information service the user B utilizes

25 is displayed on the screen of the client A.

In this system, since the user's own status information is also sent from the profile server 115 to

the client 104a along with his or her status information and the short message, the client 104a displays the status information and short message.

Likewise, the client 104b of the user B displays on  
5 its screen the status information of the clients of the users recorded in the friend list.

Figs. 3 to 5 illustrate the contents of the information processing of the game server (an example of a server that provides the information service), the profile server and  
10 the client for executing such information processing, respectively.

The procedures as illustrated in Figs. 3 to 5 are stored in hard disks in the apparatuses in the form of an object typified by a markup language document such as a  
15 computer executable program, script, or HTML document, so that they are loaded in the system memories to be executed by the CPUs. Here, the program refers to an object described in a machine language a CPU can execute straightforwardly. The script refers to an object that  
20 defines the contents of the information processing so that the CPU can execute the contents through an interpreter, a program for translating the script into a machine language. The markup language document is analyzed by a program called a browser that executes operation  
25 instructions (called a "tag") defined in the markup language document.

Next, taking an example of the game server 116a, the

operation of the server providing the information service will be described with reference to Fig. 3.

Receiving a first access request from a client (step S10), the game server 116a transfers to the profile server 115 the client name and information service name, the type name of the online game in this case, which are sent from the client. Subsequently, it starts the designated information service (S15).

During the communications for the information service, the game server 116a repeats the procedure of start → step S10 → S20 → S25 → END as in the conventional information service, thus, providing an online game for a group of users. When the information service is completed, information indicating the completion is sent to the profile server 115 (step S30 → S50). Here, the step S25 is a step for provide various information services. The step S30 is a step for determing whether an instruction or data related to the information service is inputted. The processing excepting for the above is performed in a step S40.

The processing of the profile server 115 will now be described with reference to Fig. 4.

Iterating the procedure as illustrated in Fig. 4, the profile server 115 waits for information received from the information providing server or the client of the user. When the status information and user name are sent from the information providing server, the profile server 115 writes the status information into the status information

memory area (status file) corresponding to the user name (step S100 → S105).

The client of the user transmits a status information request at fixed intervals while it is connected to the information service system. Receiving the request, the profile server 115 extracts the status information, short message and the like from the user list corresponding to the user name of the client, and transmits them to the client that sent the request (step S110 → 115). The processing excepting for the above is performed in a step S130.

In the present embodiment, a user search function is provided by the profile server 115. To achieve it, receiving a category such as a name of a particular online game as a search condition from the client of the user, the profile server 115 searches status information of all the users, and transmits the status information meeting the search condition given by the client that sent the search request to that client. The search results includes the number of users satisfying the search condition. Although it will be described later, when the user status information obtained as the search result exceeds a predetermined number, say 20, the status information is sent to the client 20 pieces of information at a time in response to the request from the client side (step S120 → S125). Here, the status information associated with user names listed in the black list is

removed from the transmitted information.

The operation of the client side will now be described with reference to the Fig. 5.

On the client side, an internal timer or the like  
5 continues to count 10 second intervals after the connection  
of the information service system, so that the status  
information request is sent to the profile server 115 at  
every 10 seconds interval. In response to the request,  
the profile server 115 sends the user status information  
10 described in the friend list. Thus, the client displays  
the status information on its screen (step S210 → S215).

An example of the display is illustrated in Fig. 6.  
Note that Fig. 6 illustrates the status information on the  
search screen of the user. In Fig. 6, the reference numeral  
15 1005 designates an icon indicating whether the client is  
connected to the information service or not by different  
shapes of the icon. The reference numeral 1009 designates  
the user name; 1010 designates information indicating a  
child; 1011 designates the type of the information service,  
20 the name of the online game, here; and 1012 designates a  
status (operation state).

The user inputs the category using a search condition  
input screen not shown. For example, when the user inputs  
a particular online game as the category (YES in step S200),  
25 the client send the inputted information as a request of  
search to the profile server 115 (step S201). The profile  
server 115 sends the user status information associated

with the input category back to the client that sent the search request. Then, the client displays the status information in the fashion as illustrated in Fig. 6 (step S202).

5        The display screen of Fig. 6 will be described briefly. The reference numeral 1001 designates an area for displaying the category search condition. 1002 designates a category type; 1003 designates the number of users satisfying the search condition; and 1004 designates  
10    a short message, a message registered by the user with the user name displayed.

(TABLE 1)

ID	utilization states	short messages
1	Let's enjoy adventure	party
2	enjoying adventure	enjoying adventure
3	item is on sale	item sell

15        On the client side, the short message corresponding to the user utilization state is set in advance as shown in Table 1, so that the user can find the utilization state at a glance.

20        In response to the utilization states of the individual users sent from the server side, the short messages corresponding to the utilization states are displayed on the side of the user names in the form of icon (e.g., balloon) as illustrated in Fig. 6.

Although the message "Let's enjoy adventure" has



one-to-one correspondence with the word [party] in Fig. 6, other phrases of the same meaning as the message "Let's enjoy adventure" can be used such as "looking for participants" and "standby adventure" in correspondence to the word [party]. Likewise, a single short message can have correspondence with a group of utilization states of the same meaning.

It is also possible for the server side to record correspondence between the "utilization states (objects)" and the short messages in advance, so that the short messages can also be transmitted from the server to the client as the personal information. In this way, the client can display the short messages without setting them by itself.

Thus, in the present embodiment, the profile server has a friend list registered by each user, which includes personal information of his or her friends.

The personal information, which includes the utilization states of the information server, is transferred from the information server to the profile server when the utilization state varies, so that the personal information is updated. The profile data is regularly transmitted to the client.

The client can check the condition of each friend on the screen. In this case, displaying the short message the user registered in advance according to the "object" can facilitate checking the conditions of the friends.

The reference numeral 1005 designates an icon indicating whether the user is registered (connected) to the information service system, in which different icons are displayed depending on whether the connection is  
5 established or not. The images of the icons are prepared on the client side, so that the client can select the icon to be displayed in response to the status information sent from the profile server 115.

The reference numeral 1009 designates a user name of  
10 a member of the information service system. 1011 designates an information service name in use. The reference numeral 1010 designates an icon showing that the user is a kid and 1012 designates the operation state of the client of the user.

15 The reference numeral 1006 designates a button (called "BACK button" from now on) for returning the display of the search result to a preceding screen. 1007 designates a sort button for rearranging the search results so that the display is rearranged in each predetermined field in  
20 response to the manipulation of the button. 1008 designates a button (called NEXT button from now on) to proceed to the next search result screen.

In this configuration, in response to the search condition the user sends to the profile server 115, the  
25 profile server 115 transmits the short message, information about connection/disconnection to the information service system, information on whether the

user is a child or not, and the message indicating the operation state to the client as the status information satisfying the search condition, so that they are displayed on the client as illustrated in Fig. 6.

5        When the user manipulates the sort button 1007, the sort instruction is sent from the client to the profile server 115, so that the profile server 115 carries out the sorting and sends the results back to the client. The client displays the sorting result on its screen (step S220  
10        → S225).

      When the user manipulates the BACK button 1006, the request for the preceding 20 pieces of the status information in the search result is sent from the client to the profile server 115, so that the status information  
15        is sent to the client. The client displays the status information on its screen (step S230 → S235).

      When the user manipulates the NEXT button 1008, the request for the next 20 pieces of the status information in the search result is sent from the client to the profile  
20        server 115, so that the status information is sent to the client. The client displays the status information on its screen (step S240 → S245). Processing excepting for the above is performed in a step S250.

      Besides the foregoing embodiment, the following  
25        configuration can be implemented.

      1) Although the foregoing embodiment uses the online game as the information service, the information service

is not limited to the online game.

2) Although when a great number of pieces of the status information is present in the foregoing embodiment, a specific number of pieces is sent from the profile server  
5 to the client, the entire search result can be transmitted to the client.

3) The notification of the status information can take various shapes such as icons, characters, and figures.

4) The video game machine according to the present  
10 invention includes a dedicated video game machine, general-purpose personal computer, mobile phone, mobile information terminal and all other information processing devices available for receiving the information services from the information service system.

15 5) Although the Internet is supposed as the communications network in the foregoing embodiment, the communications network can include a LAN, public telecommunications network, and other communications networks.

20 6) The information services provided by the information service system refer to various services such as an online game, chatting (electronic forum), message communication, E-mail, transmitting and receiving services, etc.

25 7) Although the game server and the like detects the utilization state of the user, and the profile server notifies the client of the utilization state in the

foregoing embodiment, the same server can detect the utilization state and notify of it.

Modifications other than the foregoing variations are possible, and it is the intention in the appended claims  
5 to cover all such changes and modifications as falling within the true spirit of the present invention.

The present invention has been described in detail with respect to preferred embodiments, and it will now be apparent from the foregoing to those skilled in the art  
10 that changes and modifications may be made without departing from the invention in its broader aspect, and it is the intention, therefore, in the appended claims to cover all such changes and modifications as fall within the true spirit of the invention.

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